Book review: Opus praeclarum de imaginibus astrologicis.

about the latter's ubiquity at the time (pp. 76–77). He makes an analogous mistake in conflating weaving and spinning and in misinterpreting the gender implications of a Velázquez painting of Arachne (p. 132). He is also prone to claiming distinctiveness for the Renaissance but undermining his claim by showing the ubiquity of the same material (e.g., automata or imagery of the wheel of fortune) in the Middle Ages or engaging in rich discussions of topics (e.g., fifteenth-century Siennese machine drawing) for which he has no literary parallels.

I do not want simply to castigate Sawday for not being a good historian of technology. In fact, I wish more literary scholars paid more attention to the material culture of their period; but they need to do so in an accurate and in-depth manner. *Engines of the Imagination* is at times more a work of literary tourism than an investigation of early modern technology. It shows how remarkably far the machine penetrated the minds of writers, but also how directly unreflective the Renaissance mind seems to have been about those same machines.

Early in the book, Sawday cites A. O. Lewis's compilation of primary sources about technology, *Of Men and Machines* (Dutton, 1963), as his starting point, and he has drilled down and contextualized some of them. His concluding chapter uses Leo Marx's *Machine in the Garden* (Oxford, 1964) as a cornerstone to discuss nineteenth-century angst over industrialization as an analogue to early modern technological development and then blithely moves on to post-revolutionary Russian deindustrialization and Khmer Rouge deurbanization catastrophes—all in an attempt to show that this is akin to the English Renaissance rise in Virgilian *Eclogue* poetry. Here he is at his best in showing the breadth of his reading; but, necessarily, there is little depth in the discussion of either the technologies themselves or the debates over their interpretations, many of which have been simmering for decades (e.g., the role of economics in innovation in the late Middle Ages or the intersection of Protestantism/Puritanism with the promotion of technology).

I wholeheartedly agree with Sawday that the Renaissance gave us many of our modern notions of material culture and an "infectious mechanical optimism" (p. 95), and I appreciate his important insights, such as being attentive to the synchronicity of labor and of contemporary visual images dissecting the landscape. Historians of science and technology will see this volume as more of a synthetic summary than a groundbreaking analysis of early modern technology in society—although they will find here an impressive array of contemporaneous literary observations about the machine. I sincerely hope that literary scholars give Sawday credit for trying to put the works of Milton, Montaigne, Donne, and others into the material context in which they were written.

STEVEN A. WALTON

Jérôme Torrella (**Hieronymus Torrella**). *Opus praeclarum de imaginibus astrologicis*. Edited by **Nicolas Weill-Parot**. (Micrologus' Library, 23.) 304 pp., app., bibl., indexes. Florence: Sismel Edizioni del Galluzzo, 2008. €48 (paper).

Jérôme Torrella belonged to a family of Valencian physicians whose most famous member was his brother Gaspar, onetime physician of Pope Alexander VI. Together with his two brothers, Jérôme was one of the many Spanish intellectuals who moved to Italy before the Italian Wars in order to study medicine at university. Like his brother Gaspar, he studied medicine first in Siena and then in Pisa. It was probably there that he came in contact with the famous Pier Leoni da Spoleto, physician to Lorenzo the Magnificent, who taught at the Pisan Studium from 1475 to 1487. No doubt the fertile hermetic environment of nearby Florence, and Pier Leoni's own teaching at Pisa, contributed greatly to his interest in astrological images. After obtaining his doctorate in medicine, Jérôme entered the service of the Queen of Naples, Joanne, wife of Ferdinand of Aragon (also called Ferrante). By 1496, when he started to write his *Opus praeclarum*, however, he had already left Italy, probably owing to the events that followed the French invasion of the Kingdom of Naples in 1494, and was residing in Valencia. This explains, at least in part, why the *Opus praeclarum*—which is structured as a dialogue between the physician and the king on the value of astrological images—is dedicated to Ferdinand the Catholic, King of Spain.

Nicolas Weill-Parot's edition of Torrella's work is the culmination of a series of studies on Torrella and other hermetic authors by the French historian. In his monumental book *Les "images astrologiques" au Moyen Âge et à la Renaissance* (Paris, 2002), he provided an erudite, comprehensive account of this rather neglected tradition of hermetic philosophy, devoting much space to minor authors and less-studied texts. This book, in contrast, concentrates on one work and one author; yet the two enterprises clearly complement each other.

Weill-Parot's edition is prefaced by a useful introduction to Torrella and his text. The first part (pp. 11–26) briefly reconstructs the life of the author (mostly through the various references contained within the text), provides a description of the function of talismans in the Renaissance, and frames the text within the broader intellectual debate on the legitimacy and function of talismans in the Middle Ages and the Renaissance. It is followed by a description of the edition used, a list of extant copies, and a brief analysis of the content of each of the three parts that make up Torrella's work. The editorial criteria are clearly outlined at the end of this introductory section.

Talismans, as Weill-Parot explains, are artificial objects produced by man, who is at least partly responsible for their magic virtues (p. 17). The talismans described in texts of astral magic are often called *ymago* or *imago*. As Weill-Parot indicates, Torrella's work is clearly influenced by the Renaissance rediscovery of a series of hermetic texts, but its roots are firmly embedded in the scientific-theological debate on the legitimate use of talismans that goes back to the twelfth century. With their magical character and their "addressative" nature, directed to unspecified spirits, talismans were dangerously close to other forms of demonic magic and thus were condemned by theologians such as Guillaume d'Auvergne and Thomas Aquinas. But another intellectual tradition, grounded on the *Speculum astronomiae*, once firmly attributed to Albertus Magnus, offered a more nuanced treatment of the topic. The author of this anonymous text distinguished among necromantic talismans—namely, those talismans that required fumigations, invocations, or the inscription of words—and natural talismans or "astrological images," which received their power directly from the skies. This latter type of talisman, according to the *Magister Speculi*, is natural, nonaddressative, and thus perfectly acceptable within the Christian faith. This tradition found further support in Albertus Magnus's *De mineralibus*, where the author conceived of the *artifex* simply as the instrumental cause and of the constellation as the efficient cause that donates both form and virtue to the talisman. These two traditions, the Thomist and the Albertist, are fully represented in Torrella's text, and while we can guess that Torrella firmly sides with the Albertists, the author himself never takes a firm position on the topic, leaving it to "the learned philosophers" to determine the truth of the matter.

Weill-Parot's edition concludes with a useful appendix of the main medieval and Renaissance figures mentioned in the text, from Torrella's teachers to near-contemporary physicians who had experienced the efficacy of talismans. This is a particularly welcome addition, as it gives the reader a greater sense of the sources, theoretical and experiential, on which Torrella drew. A detailed bibliography and a series of very useful indexes complete the work.

Weill-Parot's edition provides a valuable contribution to the history of science by making accessible in a modern critical edition a work otherwise little studied. Together with the original text, the reader is provided with a solid introduction and a useful critical apparatus. More work is needed on these Renaissance figures, their work, and their place in the intellectual context of Renaissance Europe, and Weill-Parot's work constitutes an important step in this direction.

MONICA AZZOLINI

Konrad Gruter von Werden. *De machinis et rebus mechanicis: Ein Maschinenbuch aus Italien für den König von Dänemark, 1393–1424*. Volume 1: *Einleitung*. Volume 2: *Edition.* Edited and translated by **Dietrich Lohrmann**, **Horst Kranz**, and **Ulrich Alertz**. (Studi e Testi, 428.) 254 + 299 pp., illus., indexes. Vatican City: Bibliotheca Apostolica Vaticana, 2006.

In one of his essays, Stephen Jay Gould remarks that "more things are buried in libraries than this world dreams of." The Vatican Library surely has more than its share of buried treasures, but one of them, Cod. Vat. Lat. 5961, has been gloriously and wonderfully brought to light by a team of German specialists: Dietrich Lohrmann, Horst Kranz, and Ulrich Alertz. The manuscript is an illustrated compendium of mechanical technologies, chiefly watercourse management (*de aquaeductibus*), waterwheels and mills (*de rotis continui motus et molendinis*), and military technologies, chiefly siege-craft (*de rebus militaribus*). The author, Konrad Gruter, was born in the small city of Werden in the Ruhr Valley, today part of the sprawling industrial city of Essen. Werden lies only about sixty kilometers north of Cologne, and in a stunning academic *coup de foudre* the editors have discovered his name in a matriculation list from the newly founded University of Cologne for 1393. Konrad seems to have aborted his studies—although his treatise bears many traces of an academic background—and journeyed to Rome, where he became a "hydraulic engineer" (part of the papal